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ABSTRACT

This report discusses the identification and treatment of young children with autism. It is divided into four components that include a summary of areas that should be addressed when designing programs and services for young children with autism. The first part describes characteristics of autism, differences between autism-related disorders, and early intervention and preschool for children with autism. The benefits of inclusive programs for children with autism are listed, along with factors that must be present for successful social and educational integration of children with autism. Key considerations that should be addressed by the assessment process are provided and the organization of the classroom environment is highlighted. Part 2 of the report discusses using the early childhood curriculum for children with autism that considers age appropriateness and individual appropriateness. Suggestions for assisting children with autism in enhancing their social skills are offered, along with recommendations for promoting language and communication development, encouraging cognitive development, and providing aesthetic and physical activities. The last two parts provide suggestions for planning the daily schedule and involving families of children with autism. Appendices include information on the criteria used to describe autism, additional intervention approaches, and treatment categories. (Contains 61 references.) (CR)

ED 455 646

EXPLORING THE OPTIONS FOR YOUNG CHILDREN WITH AUTISM

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The Commonwealth of Massachusetts
Department of Education

350 Main Street, Malden, Massachusetts 02148-5023

Telephone: (781) 338-3000
TTY: N.E.T. Relay 1-800-439-2370

David P. Driscoll
Commissioner of Education

August 1998

Dear Colleagues,

I am pleased to present to you *Exploring the Options for Young Children with Autism.* The Department's mission in writing this report was threefold: to respond to the expressed need for more information on autism, to present accurate, comprehensive information, and to offer a wide array of strategies and resources for people working and living with youngsters with autism. Children with autism, their families and teachers will be the beneficiaries of this cohesive report.

Autism presents itself differently in each person. There is no one effective technique or intervention that can be applied to all. Therefore this manuscript includes a variety of approaches, therapies, teaching and parenting strategies, and interventions that have been used to support the education and development of young children with autism. True to its title, this report explores the many options available for young children with autism.

Parents and professionals across the Commonwealth have contributed to this manuscript. Their collaborative efforts are reflected throughout this report. Extensive interviews and literature review were conducted. The Department of Education, particularly its Early Learning Services Cluster, is proud of being part of this process. I encourage you to disseminate this report to the parents and professionals who live and work with children with autism.

Sincerely,

David P. Driscoll
Commissioner of Education

ACKNOWLEDGMENTS

This publication was developed with the support of many people. The Department of Education would like to extend a special thanks to the co-authors, Barbara Domingue and Caryn Goldberg. Barbara is the mother of a son with autism. Barbara has not only been an advocate for her own son, she has brought parents and professionals together and helped them to explore constructively the options for children with autism. Her positive, proactive approach to complex issues is imbedded in this publication. Caryn is a member of the Department of Education staff with a long time interest in program options for children with autism.

We would also like to thank the reviewers of this publication who made thoughtful recommendations and additions, Ron Benham, Tracy Osbahr and Sue Linehan (a parent of a young child with autism) from the Department of Public Health, Eleanore Grater-Lewis of Educational Development Consultants, Martha Ziegler (a parent of an adult with autism) and Carol MacNeill from the Massachusetts Department of Education. Editing and updating were done by various members from the Massachusetts Department of Education, with assistance from Joni Block from Wheelock College, and Joanna Weiner, an intern from Harvard University.

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INTRODUCTION

"We went back to our guidance-counselor friend. There had to be somebody, we pleaded, who could help us, give us some answers, some reasons, tell us how to get through to our child before we wasted any more time." (Barron and Barron, 1992)

Autism is a puzzling disorder and poses enormous challenges for parents and professionals who are trying to understand and help young children. Children with autism often appear withdrawn from life around them. Parents, teachers and those significant others who reach out to them with love frequently receive little emotional response and are left feeling bewildered, hurt and frustrated.

However, autism is not an impenetrable wall. Over the past several years significant progress has been made in the care and education of children with autism. Progress occurs when individuals involved in the lives of children with autism continuously seek a greater understanding of what autism is and how it is diagnosed and treated. This paper has been developed for those individuals who seek such an understanding. This paper is divided into four components that include a summary of areas that should be addressed when designing programs and services for young children with autism, a bibliography, and a comprehensive list of resources. The appendices include information on criteria used to describe autism, additional intervention approaches, and treatment categories. Its goal is to inform those who wish to make a difference in the lives of young children with autism of effective practices for their care and education. While it is impossible to predict what life will be like for a young child with autism when he or she reaches adulthood, it is possible to provide children with every opportunity to learn and grow in enriching environments. That is our commitment.

AUTISM IS...

"We start with an image - a tiny, golden child on hands and knees, circling round and round a spot on the floor in mysterious, self-absorbed delight. She does not look up, though she is smiling and laughing; she does not call our attention to the mysterious object of her pleasure. She does not see us at all." (Park, 1982)

Autism is a pervasive developmental disability that typically appears during the first three years of life. The result of a neurological disorder that affects the functioning of the brain, autism occurs in approximately 10 per 10,000 individuals. If the full range of autism spectrum disorder is included, rates may be more than 22 per 10,000. Autism is no longer believed to be a rare disorder. These prevalence estimates indicate that autism is more common than Down Syndrome, childhood cancer, or Fragile X Syndrome (Bristol et al, 1996). Autism affects about four times as many boys as girls. Autism is equally distributed among all races, nationalities and social classes. Family income, lifestyle and educational levels do not affect the chance of autism's occurrence.

Autism interferes with the normal development of the brain in the domains of reasoning, social interaction and communication skills. Children and adults with autism typically have deficiencies in verbal and non-verbal communication, social interactions and leisure or play activities. Medical researchers are exploring different explanations for the various forms of autism. Although the specific cause of autism is not known, current research links autism to biological and/or neurological differences in the brain. There are no medical tests to diagnose autism. An accurate diagnosis must be based on observations of the child's communication, behavior and developmental levels. However, because many of the behaviors associated with autism are shared by other disorders, a doctor may complete a number of different medical tests to rule out other possible diagnoses.

It is conservatively estimated that nearly 400,000 people in the United States today have some form of autism (Autism Society of America, 1995). The number of individuals reported to have autism is 0.3% of the total special education population (Sixteenth Annual Report to Congress on the Implementation of The Individuals with Disabilities Education Act, U.S. Department of Education, 1994). Yet the majority of the public, including many professionals in the medical, educational, and vocational fields, is still unaware of how autism affects people and how to work effectively with individuals with autism.

There are other suspected causes of autism, some due to abnormalities in the functioning of the brain possibly caused by infections, toxic agents during pregnancy, genetic predispositions, and other biological or metabolic conditions. Current ideas regarding the causes of autism dispel earlier notions that autism was caused by parental behavior.

Autism is referred to as a *spectrum disorder*, meaning that the symptoms and characteristics of autism can present themselves in a wide variety of combinations, from mild to severe. Although autism is defined by a certain set of behaviors, children and adults can exhibit any combination of the behaviors in any degree of severity. Two children, both with a diagnosis of autism, may act very differently from one another.

Autism is a developmental disability that manifests itself in varying degrees. As a result, children with autism may have great differences in their cognitive development. For example, they may excel in an area such as math yet may be severely deficient in language abilities. Some children may function fairly independently in performing daily living skills, such as toileting or dressing, while other children are dependent on others to meet their basic needs.

Professionals use a handbook, the Diagnostic and Statistical Manual, now in its fourth edition, (DSM-IV) to define and diagnose autism. Several autism-related disorders are grouped under the broad heading "Pervasive Developmental Disorder or PDD." Falling under the broad definition of PDD are the following specific diagnoses:

- Autistic Disorder- The child has very significant difficulties in language, nonverbal communication, and social interaction (may have typical or delayed cognitive development in other areas).

- PDD-NOS (not otherwise specified)- The child's social interaction and/or verbal and nonverbal communication are severely impaired (may have typical or delayed cognitive development in other areas).

- Asperger's Syndrome- The child has diminished nonverbal communication and social interaction but normal language and cognitive development. In addition, individuals with Asperger's Syndrome more commonly have very intense, circumscribed interests and repetitive patterns of behavior, interests and activities.

- Rett's Syndrome- An extremely rare medical disorder that involves normal functioning after birth. Between 5 months and 48 months there is a loss of purposeful hand skills and severe impairment in expressive and receptive language development; loss of many gross motor skills and onset of poor coordination. Rett's disorder has only been reported in girls.

- Childhood Disintegrative Disorder- Another rare occurrence in which the child develops normally in all areas, and then at some point between 2 years and 10 years the child loses skills across many areas. The child loses social and language skills and also may lose motor and/or bowel and bladder control.

Four main criteria are used to describe pervasive developmental disorder and autism. A criterion is met only if the presenting behavior is abnormal for the person's developmental level. These criteria and accompanying characteristics are described in Appendix A.

ENHANCING EXPERIENCES

EARLY INTERVENTION AND PRESCHOOL

Early identification of children with autism is critical. Intervention services and the planning of a comprehensive educational program should begin as early as possible (Pfieffer & Nelson, 1992). The early years (0-3) are crucial for developing language and social behaviors for all children, including children with autism (Groden, Domingue, Chesnick, Groden & Aron, 1983). Early intervention can contribute to improvement in sensory-motor development, language and social development, behavior, and family adaptation (Simeonsson, Cooper & Scheiner, 1982; Pueschel & Bernier, 1984; Erikson, 1987; Dunlap, Robbins, Dollman & Pliens, 1988; Harris, Handleman, Gordon, Kristoff & Fuentes, 1991).

Services for young children with disabilities, including autism, are outlined in the Federal Special Education Law, the Individuals with Disabilities Education Act (IDEA). Preschool education for children with disabilities, ages 3-5, is covered in Section 619 of IDEA, and in Massachusetts is further detailed in the state Special Education Law, known as Chapter 766. Part C (formerly Part H) of IDEA covers early intervention programs for children with disabilities from birth to age three; in Massachusetts this program is administered by the Massachusetts Department of Public Health. All of these programs offer choices in the types of services to be provided to children and their families. For example, an early intervention program may be provided in an early intervention center, in the child's home, in a child care setting, or in a combination of sites.

The foundation of any early intervention service should be collaborative planning between parents and professionals. Consistent approaches in intervention and services should address both the needs of the child with autism and the needs of the family.

INCLUSION

If children with autism are to live, work, play and be part of their communities, it is important to include them in the lives of their communities and in the typical activities of their age-mates. Children with autism can benefit from opportunities to make friends with their peers. Being placed in the proximity of other children is not enough; relationships need to be cultivated because they may not develop easily. The challenge in creating social interactions among children with autism and their non-disabled peers is in helping them build relationships.

There is a promising body of research documenting that young children with autism may benefit **socially** and **educationally** from being in a preschool or child care program with normally developing peers. A study carried out by Meyer, McQuarter and Kishi (1985) found that teacher instruction is not the most effective strategy for the development of many critical social, communication, and play skills for children with autism. When children with autism are given opportunities to interact with non-disabled peers in developmentally appropriate environments during early childhood, learning occurs spontaneously. The child begins to model the behavior of others and to practice critical skills such as communication.

Benefits of inclusive programs include:

- learning by observing others and modeling their behavior (Coleman and Stedman, 1974; Egel, Richman and Kogel, 1981);
- promotion and facilitation of social interactions (Mesaros, 1984; Strain, 1984);
- development of communication and play skills (McHale, 1983);
- development of positive peer attitudes (McHale and Simeonson, 1980);
- imitation of appropriate behaviors (when students with behavior problems are placed with other students who do not exhibit the same problems, the students with behavior problems may begin to imitate the more appropriate behaviors modeled by their peers) (Olley, 1981);
- enhancement of the ability of children with autism to function in regular education environments (Donnellan, 1980);
- development of friendships (Donnellan and Kilman, 1986); and
- development of positive and realistic attitudes toward children with autism by typically developing children (Miller, 1988).

(Adapted from Mesaros, Richard, A. and Donnellan, Anne M., 1987.)

Successful social and educational integration of children with autism does not occur without careful planning. Certain factors must be present:

- teachers whose knowledge about autism includes current research and available resources;
- a structured curriculum;
- highly motivating activities (Quill, 1989);
- clear instructions and supervision (Strain, 1984);
- age-appropriate materials and activities;
- inclusion of all children in conversations and discussions;
- encouragement of children to play together;
- related services (i.e., speech and language) to address specific needs such as developing language and communication skills; and
- information sharing and collaboration among parents, administrators, teachers and other staff.

It has become clear that separate or segregated programs do not provide generalized learning for children with disabilities, including those with autism. In segregated programs, the children learn and adapt to the environment in that specific program. We know that children must learn to apply (i.e. generalize) skills they have acquired. Children with autism particularly need to receive training and assistance in situations that will promote generalization to natural environments (home, school, restaurant). If generalization skills and coping strategies are not taught to children with autism in the context where they will use them, they will grow into adults who lack the skills that they need to function in the community. Dealing with everyday situations will be enormously difficult for them. The manner in which instruction is being offered to teach generalization skills is continuing to change (Dalrymple and Ivanick, 1992). The inclusion of children with autism in regular programs, and efforts to improve these programs and methods of inclusion, will make a tremendous difference in the quality of their lives and their futures.

ASSESSMENT

The developmental profile of preschool children may depict a diverse range of needs including communication, cognitive, language, and behavioral. The goal of assessment is to gain as complete information as possible on the characteristics of the individual child and the family (Watson and Marcus, 1988). However, there is little to be gained from this process unless the information gathered is used in meaningful ways. An individualized educational plan (IEP) for the child that is based on assessment data that is analyzed in a thoughtful way will lead to a higher quality experience for the child.

Fundamental questions to be addressed by the assessment process include:

- How is this child functioning on a developmental continuum?
- How does the environment affect this child's functioning?
- What resources need to be established to assist this child?
- What are the needs of the family?
- What do the parents perceive to be the needs of their child? (Dunlap, Robbins, Dollman and Plienis, 1988).

Information gathering should be both formal and informal. Tests, checklists, and observation during play are all helpful. The most appropriate assessment instrument should be selected from a wide variety of instruments based on the validity, reliability and ability to capture and describe the abilities of the child. Teacher observation and information from parents provide valuable insights about the child that are not readily measured.

The day-to-day activities planned for young children are built upon the information obtained through appropriate assessments. A comprehensive early childhood program adds to and/or modifies the individualized educational plan through ongoing observation and assessment. Continual individualizing and evaluating will ensure that the program in place for the child continues to meet his/her needs.

CLASSROOM ENVIRONMENT

The preschool environment should help the child develop in all areas such as language skills taught in social context, motor skills directed toward increased ability to manipulate the environment, cognitive skills increased through active experience and problem solving. We cannot afford to offer less to the young child with autism. (Miller, 1988).

Organization of the environment is crucial for all young children. The types of materials used, the way those materials are organized, and how the room is set up convey very important messages to them. Children benefit from having clearly defined, well-equipped interest areas that promote independence, foster decision making, and encourage involvement.

Typical areas found in early childhood programs include: block area; house/dramatic play area; a place for play with table toys; an art area; an area for cooking; a computer area; a sensory area including a sand/water table and suspended equipment; a library; a section for movement and music; and a safe outdoor area.

Children with autism have difficulty interpreting environmental cues. It is extremely important to pay particular attention to the organization of the environment in order for the child with autism to focus on what is important within those surroundings. The suggestions listed below may be helpful in planning the early childhood environment so as to maximize growth and development.

- The space should be marked with clearly labeled visual signs/pictures so that spaces are easily identifiable.
- There should be a quiet space available, which is not auditorily or visually stimulating. This space can be used when the larger setting is too distracting or when the child is anxious and needs to focus.
- The environment should be predictable and should encourage children to make choices and be independent.
- Stimuli such as noise, light and other distractions should be controlled by the adults.

USING THE EARLY CHILDHOOD CURRICULUM

"The primary teaching goal is to help young children use the environment productively, and see themselves as capable learners - as individuals who are developing skills and understandings that will enable them to make sense of the world and to succeed in it." (Dodge and Colker, 1988.)

Early childhood programs provide services for children from birth through age eight. Programs are offered in a variety of settings including public or private preschool, child care centers, kindergarten, and primary grade schools. Of course, much learning also occurs at home.

The early childhood curriculum provides a planned environment where children interact with materials, their peers, and adults. Though intended to address students in a typical early childhood program, this curriculum applies to young children with autism as well.

Developmentally appropriate practice is concerned with two essential components. The first component is *age appropriateness,* which refers to the use of "knowledge of typical development of children within the age span served by the program" to provide a "framework from which teachers can prepare the learning environment and plan appropriate experiences" (Bredekamp, 1990).

The second essential component, *individual appropriateness*, refers to the necessity for the program to provide for individual needs. Both curriculum and adults' interactions with children should be responsive to individual children's needs (Bredekamp, 1990). Early childhood programs are expected to meet the needs of each child rather than expecting the child to adjust to the demands of the program. Designing a program that is individually appropriate is crucial for children with autism because autism is "too variable a condition and not well enough understood for any one intervention strategy to be successful for <u>all</u> children with autism" (Marcus and Schopler, 1987).

As with all children, no two children with autism are alike. Each child brings individual strengths and needs to a program. It is therefore the task of all involved to design a program that will be responsive to the individual needs of each child. For this reason there is no "*formula*" or "*recipe*" for planning a curriculum that includes a child with autism.

Following is a discussion of five key areas of the early childhood curriculum: nurturing social development, promoting language and communication development, gaining an understanding of the world, the arts, and the teacher's role. In addition to a general discussion of these areas, ideas about how each area of the early childhood curriculum can be adapted to provide optimal learning experiences for children with autism are included.

NURTURING SOCIAL DEVELOPMENT

Children develop social skills that assist them in their interactions with others and help them recognize their influence on the behaviors of others (Olley and Stevenson, 1989). Early childhood programs typically assist children in developing these skills by providing opportunities for increased independence, assisting in developing pro-social and cooperative behavior, helping children experience a sense of self-esteem and value, providing opportunities for sharing, and assisting in social interactions by creating time and space for both small and large group interactions.

Children with autism often withdraw from social interactions and situations for a variety of reasons. They often find the actions of adults and other children too confusing. It has been suggested that they may have difficulty establishing eye contact with another person because they are afraid that they will not understand what the other person is trying to communicate (Lovaas, 1995). To a greater degree than in typically developing children, social skills and social interactions must be taught to children with autism if they are to learn to be part of a community.

Social skills are best developed in an inclusive setting and should cut across all curricular areas. The following are suggestions for programs and staff to assist children with autism in enhancing their social skills.

- Provide professional development opportunities to help adults develop an understanding of the social challenges children with autism face. Teachers and staff should understand that the child with autism may want to interact but does not know how.
- Social exchanges should be supported by the adults.
- Social situations should be prepared for using a multi-sensory approach (visual systems as well as verbal instructions).
- Children should have their personal space respected, but they should also be encouraged to take part in social situations.
- The child may need specific social rules and these may need to be taught in very concrete ways.

PROMOTING LANGUAGE AND COMMUNICATION DEVELOPMENT

Enhancing language and communication is another crucial area in curriculum organization. Early childhood programs provide support in this area of development by:

- helping young children to build conversational skills;
- helping to expand their language through asking open-ended questions, and encouraging more than just one word answers to questions;
- assessing and fostering young childrens' phonemic awareness;
- labeling items with pictures and words;
- using visual aids (puppets, finger plays, flannel boards and pictures);
- reading books and stories and talking about them;
- talking about everyday and special experiences.

In order for these interaction strategies to be of value to children with autism, it is essential to understand the specifics involved in the impairment of their language and communication skills. Children with autism have a range of communication abilities. Some never learn to use spoken language; others only learn basic language; and some may be delayed in acquiring speech. Additionally, others develop advanced speech but may not understand spoken language or the appropriate context in which it is used and may have problems showing emotions, expressing feelings and ideas, or knowing the appropriate time and manner in which to say things. Some children with autism are able to read at an early age. While reading normally begins during the ages of four to six, these children are often able to decode texts as early as two or three. In fact, the very children who have little meaningful conversation (and are often restricted to echoing) will, when they enter a room, seize any reading material and begin to read aloud in a ritualistic fashion (Gardner, 1993).

Problems for children with autism in <u>understanding</u> language may range from a difficulty in understanding all but basic labels and instructions to an overall understanding of language but with difficulty in understanding underlying feelings and intent. Other language and communication problems may include echolalia-- utterances spoken in an immediate or delayed manner with limited evidence of comprehension or communicative intent (Prizant, 1983). "Communicative intent" focuses on pragmatics and refers to meaningful or purposeful communication from one individual to another.

Strategies to enhance children's language and communication skills may include:

- identifying the level of the child's expressive and receptive language skills and adjusting the language used with the child to meet his/her level of development;
- emphasizing the functional use of language and communication in all natural settings;
- remembering to <u>show</u> the child with autism what is meant at the same time a verbal instruction is given;
- using adaptations that address their difficulty in understanding verbal communication, such as pairing spoken language with sign language or using a communication notebook with realistic pictures (i.e., toilet, food items, clothing);
- having clear expectations and being consistent so that the child can do what is being asked;

- integrating the communication goals into all aspects of the curriculum using a variety of communication techniques;
- encouraging following directions, dialogue and paying attention to others;
- setting up opportunities to promote communication;
- being direct and concrete;
- analyzing what the child's behavior may be trying to communicate;
- using a multi-sensory system (visual systems as well as verbal instruction) to help explain events. Lists, calendars and pictures are helpful;
- getting down to the child's physical level to establish eye contact;
- following the child's lead during play, allowing him/her to select favorite activities;
- sharing physical space with children and demonstrating an interest in their play. For example, playing along side the child and labeling the objects as the child handles them;
- avoiding use of highly directive language or a lot of questions that may confuse the child;
- helping to mend relationships when they break down. Children with autism don't know how to restore relationships. Teachers need to work as intermediaries and help children out; and
- giving the child sufficient time to process language.

GAINING AN UNDERSTANDING OF THE WORLD: Cognitive Skills

The cognitive tasks that are part of early childhood programs help young children acquire problem-solving skills, concepts, and information leading to a fuller understanding of the immediate world (Dodge and Colker, 1988).

Children with autism need to share experiences with their peers as a way of understanding the world. It is important to understand a particular child's favored learning strategies so that activities may be designed to increase his/her learning.

Some ways in which children practice and demonstrate their cognitive skills include:

- labeling, classifying and sorting of objects by color, size and shape;
- using numbers-- counting objects, observing one-to-one correspondence;
- learning the attributes of different materials like water and sand through play;
- experiencing the community via walks and field trips; and
- observing natural events (life cycle of plants and animals).

Children with autism are literal and concrete thinkers. They will rarely engage in imaginative play, but may excel in such tasks as puzzles, letter recognition activities, and using the computer. They may enjoy repeating the same activity. Some may take objects and engage in self-stimulatory activities such as rocking or moving the objects in front of their eyes. Children with autism seek the comfort of routines, sometimes becoming very dependent on them. New activities may be confusing and overwhelming.

Many of the same strategies outlined in the previous discussion of social and communication enhancement apply to fostering cognitive skill development. Key strategies include allowing extra time for the child to process incoming information, and using a multi-sensory system of presenting information (visual as well as verbal input).

Other ideas that can be incorporated into a curriculum plan to foster cognitive development are:

- teaching skills in the context of play, such as practicing language and fine motor skills during puppet play or assisting in the development of gross motor skills on playground equipment;
- using demonstration, modeling, completed models/examples and techniques that encourage participation;
- providing concrete activities that can be explored in a variety of ways, such as using a sand or water table to develop the sense of touch, practicing language and enhancing socialization through small group play; and
- using the child's areas of strength and motivation to plan learning activities such as supporting a child's interest in a particular toy or activity.

THE ARTS

> *"One subject made school bearable for me and that was art-creating something special out of cardboard or with paints or paste. From the time I was a little girl, I liked to make things. At the time no attention was paid to the holistic, global artistic side of the brain or the linear, sequential language side of the brain. But obviously, an art-centered curriculum would have encouraged me to learn."* (Grandin, 1986)

Aesthetic and physical activities are vital to children's growth. The visual arts—finger painting, drawing, playdough, brush painting, collages, and other media—offer children the opportunity to be creative and to communicate through media other than language. Children also express themselves creatively through music and movement or dance. Many children with autism display an unusual musical aptitude. The literature is filled with accounts of astonishing musical and acoustical feats carried out by autistic youngsters (Gardner, 1993). In addition, well-designed games and activities that encourage music and movement often have positive results, such as:

- enhanced body awareness;
- refined fine motor skills;
- increased coordination, agility, and balance;
- a stronger ability to use all senses in learning -- visual and auditory discrimination; and
- coordination of temporal abilities including synchrony, rhythm and sequence.

Children naturally enjoy active play, such as running, jumping, balancing, climbing and moving through obstacle courses. Children's play also incorporates fine motor activities, including playing with stacking toys, blocks, beads, rings, puzzles, scissors, play-dough, etc.

Many children with autism have good motor development, but have trouble making their bodies do what they want them to do. They may have difficulty in dressing, playing ball, and participating in circle time activities that involve music and movement. Strategies to maximize the effectiveness of music and movement activities include:

- incorporating music and movement across curriculum areas;
- providing for a physical release by engaging the child in creative movement when he/she is feeling stressed or upset or using soft, calming music;
- using visual along with verbal cues whenever possible;
- designing activities with clear beginnings and clear endings;
- minimizing transitions and clearly marking and structuring these times; and
- keeping waiting to a minimum at the beginning and end of activities.

THE TEACHER'S ROLE

Educators who learn about autism provide a valuable service for children with autism and their families. Teachers of young children with autism face many challenges because of the variability from child to child and the need to individualize the early childhood program.

The following are suggestions for teachers who are working with children with autism.

- Follow the child's lead and interests when designing activities.
- Never forget that each child's perception of the world is different from others. Try to understand a child's perceptions before expecting him/her to understand the behavior of others.
- Be flexible.
- Help children interact with their peers by structuring activities.
- Address the child's unique learning needs through individualized teaching methods and adaptations.
- Use the child's strengths to build self-esteem.
- Foster teamwork among all adults involved with the child through open communication and sharing resources, knowledge and teaching strategies.
- Help the child move toward increased independence.
- Be sensitive to signs of the child being stressed and overwhelmed; be knowledgeable of relaxation techniques to use in these instances.
- Set clear expectations and be consistent with them.
- Be knowledgeable of multi-sensory teaching strategies, including the use of visual systems.
- Assist the child to communicate. Use adaptations such as demonstrations, pointing, or communication books.
- Respect the child's personal space but include him/her in social activities.
- Build trust.

MOVING THROUGH THE DAY

"I needed to preserve sameness in my environment...I wanted everything the same. I even wore the same jacket and dressed in the same kind of clothes day in and day out." (Grandin, 1986)

As previously indicated, the challenge teachers in early childhood programs face is the need to address the unique learning characteristics of the child with autism within the context of the normal curriculum. Teachers must integrate the educational goals and targeted areas of need into the various daily activities (Miller, 1988).

THE DAILY SCHEDULE

Children with autism struggle to make sense of a world that they find confusing. For these children to get the most out of the environment, there must be a plan established to help them move through their day with confidence and assurance. Consistency in the schedule is important because it helps children to predict the sequence and events of the day. This type of organization is crucial for children with autism.

The typical early childhood program provides an established schedule and a variety of activities. The daily schedule includes a combination of indoor and outdoor activities; quiet and active activities; individual, small group, and large group activities; gross motor and fine motor activities and child-initiated and adult-initiated activities. Within this schedule, routines are established that lend a predictability and rhythm to the day that children find comforting. Typical routines include coming and going, meals and snacks, time for rest, self-help activities, clean-up activities, and transition activities.

The following suggestions may assist in planning the daily schedule for the classroom that includes a child with autism.

- Provide consistent and clear daily and weekly routines. This structure, routine and repetition will enable the child to anticipate, to make choices and to have some impact on activities and other people.
- Clearly establish the settings for various activities, the approximate duration of each activity and the order in which activities will occur.
- Provide a highly structured repertoire of activities and slowly broaden these experiences, gradually building in change to ensure learning and generalization. For example, if a child is being taught to recognize pictures, symbols, or words representing "bathroom," the activity may begin as a matching exercise and move on to identification of symbols or words in a communication notebook and then on to bathrooms in the school, at home or in restaurants.
- Have a plan for every period of the day.

- Establish clear, visual means of demonstrating what and when events and activities will take place during the day. Prepare children carefully and allow ample time for transitions from one activity to the next and for changes in the routine. Prepare them by using visual systems (i.e., pictures or written schedules, objects such as egg timers or clocks).
- Try to avoid waiting periods.
- Clearly signal the endings of activities and the beginnings of new ones in a nonverbal way (turn on music, flick the lights on and off).
- Integrate children with autism into highly predictable activities one activity at a time, with enough time allotted to learn each activity well.
- Respect the child's right not to participate in an activity.
- Become involved in activities that the child is involved in and follow his/her lead and interests.
- Know the child's special interests and skills and incorporate them into the activities.
- Make sure that activities and materials are functional and age appropriate.
- Provide time and space for the child to be alone.
- Be sure reinforcers are age appropriate and review them regularly for effectiveness.
- Use the child's cognitive strengths (i.e., ability to read written material) in functional, interactive ways (i.e., reading steps in a recipe for a cooking project).
- Assist the child in developing play skills.

Be especially well prepared for any large group activity where all children are involved in the same activity, such as circle time. Some ideas for structuring large group activities include:

- Keep circle time short.
- Clearly mark the spot where circle time is held.
- Build predictable routines into this activity.
- Have an alternative, preferably quiet, activity ready if the child is not able to deal with the circle time or large group activity.

PLAY TIME

When presented with opportunities to play with other children, children with autism often remain isolated. It is not that children with autism do not play. The problem is that their play patterns are unusual, hard to interpret and often do not fit in with the ways that other children play. Many fail to play spontaneously, and they develop ritualistic and repetitive patterns of play. Children with autism often wind up watching other children play, not knowing how to join, not able to communicate their own interests, and not understanding the social advances of the other children.

"Children with disabilities, like all children, need to be aware of and use their strengths so that they can contribute in ways that are meaningful and satisfying." (Karnes, 1992) Strategies to enhance play skills should be incorporated into all aspects of the early childhood program. The following ideas may be useful in assisting the play of children with autism.

- The role of the adult should be facilitative rather than directive.
- Set up play partners or take on this role. Many children with autism find adults easier to follow because their behavior is more predictable and more structured than the behavior of other children.
- Make play spaces accessible, well-defined, and highly organized.
- Choose play materials on the basis of age appropriateness, potential for social play, realism and structure.
- Build on a child's play activities by suggesting additional props and themes.
- Assist other children in discovering ways to involve the child with autism in their play activities.

INVOLVING FAMILIES

"We lead a life of uneasy ambivalence.
Some days we search for miracle cures,
other days we celebrate the everyday miracles:
support from those who love us,
teachers who are amazingly caring and understanding,
gifted and compassionate doctors who don't
make us wait in waiting rooms.
It is these everyday miracles that sustain us
on darker days..." (Dreier, 1990)

Family involvement is an important component of a successful, comprehensive early childhood program working to meet the needs of young children with autism. Preschool children live in a "family-centered" world (Miller, 1988). A family's impact on a child's development is crucial, particularly for a child with autism. Professionals need to learn as much as possible about the child from the experiences of the child's family. They also need to understand how the child's disability affects the family. Using the insights gained from looking at the child within the context of a family, the early childhood staff can be more responsive to the needs and concerns raised by the family. This section will briefly review issues related to families with children who have autism.

Today we know that parents are not responsible for their child's autism. Parents of children with autism are not distinctly different from the parents of normally-developing children with respect to parental attitudes, personalities, or styles of nurturing (Rutter, 1971; DeMyer, Hingtgen and Jackson, 1981). Having moved away from thinking parents cause autism, professionals now put their energy into working with parents to assist the child with autism to grow and develop to his/her fullest potential. This can only be achieved through the collaboration of parents and professionals.

HOW TO BEGIN

Families of children with autism are typical families who have an additional challenge of raising a child with a disability. These families will have to make many difficult decisions. Ideally, these decisions will be made on the basis of the best information regarding services and supports that will meet the individual needs of their child.

It is important to be aware that families of children with autism often feel isolated. Given the ambiguity of autism, the severity and duration of the disability, and the frequent lack of community understanding and support, these families often need resources in order to prevent family crisis (Bristal, 1984).

Because knowledge about autism is rapidly changing and sometimes contradictory, parents may find themselves going from agency to agency and organization to organization, trying to access the information and support they need. It is essential that both parents and professionals be aware of the most recent information about autism and the various program options for intervention and support.

RESPONDING TO THE NEEDS OF FAMILIES

Professionals and families need to work collaboratively in designing an intervention program that will meet the needs of their child. If professionals make an effort to understand each family's perspective, beliefs, social values, and cultural identity, they will more fully comprehend how parents are raising their child. Parents have the right to take part in decision-making concerning their child's care and education. They need sound information to make informed choices. It is critical for professionals to be honest in discussing expectations, and sensitive in their approach. Parents have the most expertise concerning their child. Good early childhood professionals recognize and affirm this and work with parents on assessment and program development (Miller, 1988).

The staff in an early childhood program need to understand the dynamics of autism and how it affects the child in their care. It is important to be aware of the interplay between language and social skills, the communicative abilities of the child, the meaning of behaviors exhibited by the child, and the importance of structure and routine for the child. This information and other knowledge should be used when discussing program options with parents.

All parents are responsible for the day-to-day care of their children. Parents who have children with disabilities may require support in this care. Staff can guide parents by helping them to access current information on research and intervention strategies. The early childhood staff can respond to the request of families for support and relevant information about autism by having resources (books, audio and video cassettes) available to parents. It is important for staff to be familiar with local parent organizations and link parents with other parents.

Parent involvement activities enhance the partnership between home and school. Parents benefit from observing their child's program regularly, becoming involved in their child's program, and offering suggestions and feedback. Parents are more likely to be involved in their child's education if an atmosphere of mutual trust and respect is established by staff. Be sensitive to the extra demands placed on families to schedule doctor's appointments, extra therapy, and to spend time with other children in the family, particularly when expecting parents to work with their child with autism at home. Be cautious about accepting judgmental attitudes

such as "parents are failing to follow through" or "lack of cooperation on the part of the parent" (Cutler, 1981). Supporting and empowering parents can lead to a successful educational experience for children with autism and can provide a foundation for the development of important advocacy skills which can be used throughout the child's life.

Given the complexity and ongoing changes in the treatment of autism, staff need to be involved in ongoing professional development by going to workshops, conferences, reading literature, and networking. It is critical to remain current with "cutting-edge" information that can be shared with families and community members. Professional development can help staff understand the effectiveness of current treatment strategies and learn how, with appropriate preparation, the early childhood environment can offer children with autism the opportunity to grow, develop and attain their potential.

CONCLUSION

"Not too long ago my son took a four day vacation in the mountains.
What's more, he paid for it out of his own earnings. Big deal, you say?
For our son who has autism, is epileptic and deaf....
you bet it's a big deal! For my wife and me, it's also a major triumph."

- Anonymous Parent

The above quote from a parent illustrates the hope and promise that a child with autism can reach his/her potential. For a person with autism and all those who are involved in his/her life, the disability will pose challenges and create many frustrations, disappointments, and heartaches along the way. These can be managed as long as everyone is willing to work together, never losing sight of what the unique needs and strengths of every individual with autism are. Mistakes may be made, but these may result in growth and strength if people recognize them as opportunities from which to learn. Parents, teachers, administrators and researchers need to be aware of and sensitive to "Exploring the Options for Children with Autism."

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APPENDIX A

CRITERIA USED TO DESCRIBE PERVASIVE DEVELOPMENTAL DISORDER AND AUTISM

- A criterion is met only if the presenting behavior is abnormal for the person's developmental level.

1) Social Relationships

The first set of criteria focuses on problems in the development of social relationships. These problems consist of:

- an apparent lack of awareness of other people's needs and feelings;
- inability to communicate the need for comfort at times of distress;
- lack of or impaired ability to imitate behaviors of others;
- social play atypical for developmental age;
- significant difficulty in the ability to form friendships;
- difficulty expressing or understanding emotions;
- difficulty understanding social cues;
- avoidance of eye contact or odd use of eye contact, such as prolonged staring at others;
- prolonged periods of giggling or laughing for no apparent reason.

2) Communication

The second set of criteria focuses on abnormal communication. Children with autism have difficulty using language. Although impaired language and socialization are found in many developmental disorders, the particular pattern of language difficulty found in autism is distinctive to the syndrome. This pattern may include:

- having no mode of communication;
- lack of interest in stories;
- marked abnormalities in the form and content of speech, including stereotypic and repetitive speech, reversal in the usage of pronouns, idiosyncratic use of words and phrases, or frequent irrelevant remarks;
- marked impairment in the ability to initiate or sustain a conversation despite adequate speech;
- trouble staying on a topic unless it is a favorite topic, or perseverating on a favorite topic;
- difficulty conversing;
- echolalia-utterances which are repeated either immediately after or at a later time (delayed echolalia) after the model utterance;
- difficulty answering questions, understanding concepts and long sentences.

3) Behavior

The third set of criteria describes restricted, repetitive, and stereotypical patterns of behavior (Rutter and Schopler, 1988). This category includes:

- stereotypical body movements such as hand clapping, jumping or rocking;
- persistent preoccupation with parts of objects, or attachment to unusual objects;
- absence of imaginative play activity;
- distress over changes in trivial aspects of the environment such as a chair being moved to a different spot in a room;
- insistence on following routines precisely;
- markedly restricted range of interests and preoccupation with some narrow interest such as listening to the same song over and over;
- abnormal response to sensory stimuli;
- staring at lights, shining objects and patterns;
- abnormal responses to temperature or pain;
- lack of response to sound, or hypersensitivity to certain sounds such as the ringing of a school bell.

A child may experience additional problems associated with autism, including pica, which involves a craving to eat things which are not foods such as dirt, clay, chalk, glue or hair, overeating or lack of a balanced diet. Some children may be on medication for behavior control. Children may also have sleeping and/or toileting problems.

4) Early Onset

The final requirement of the diagnosis of autism is that the onset must occur during infancy or childhood (Adapted from: Diagnostic and Statistical Manual, Third Edition, Revised (1987), American Psychiatric Association).

APPENDIX B

ADDITIONAL INTERVENTION APPROACHES AND METHODOLOGIES

Because of the great variability among people with autism, program designs should be eclectic and take a multi-sensory, holistic approach. Training and support systems should be offered to caregivers and incorporate new information as it becomes available. This section outlines a sampling of different approaches and methodologies for developing an early childhood program beneficial to young children with autism. The examples of the techniques are meant to be illustrative rather than comprehensive and offer a variety of options to consider when determining an educational program. Data on the effectiveness of many of these approaches and methodologies are minimal. Before selecting a specific intervention, families and educators are encouraged to evaluate carefully the research and effectiveness of the program they choose.

DEVELOPMENTAL and RELATIONSHIP-BASED APPROACH

A developmental approach maintains that a child's development proceeds by well recognized stages. Children with autism tend to move off this track over the first few years of life. Stanley Greenspan maintains that all areas of development are interrelated. A developmental and relationship based approach suggest that reciprocal social interaction is the foundation of many areas of development, including play skills, language, peer play and cognitive skills. It is the social connection that enables individuals to learn from others, to develop relationships, and to participate successfully within the family and community (Klaw, 1997). A developmental and relationship based approach, such as Stanley Greenspan's Floor Time, assists children in re-establishing typical developmental sequences effectively by establishing relationship-based interactions. The goal of this intervention is for the child to develop spontaneous interactive behaviors that are purposeful and intentional. By following the child's lead, we can encourage interaction and help the child form a sense of connection to others. This also increases communication, and fosters mutual attention and engagement. In addition, this approach works with the child's sensory processing and other regulatory difficulties to establish a sense of attention and engagement (Greenspan, 1992).

APPLIED BEHAVIORAL ANALYSIS

Applied behavioral analysis techniques, also known as behavior modification, have been used in special education programs for many years. It is based on the premise that all behavior is learned through the consequences following the behavior. If the child likes the consequence, the behavior will likely be repeated. If the child does not like the consequence, the behavior is less likely to be repeated. Problems with behavior can therefore be "unlearned" and appropriate behavior can be substituted for the inappropriate behavior through a system of rewards and punishments (Bruey, 1989). There are many components to applied behavioral analysis and its implementation. When determining which component to implement, consider the individual characteristics of the child such as motivation and response to certain stimuli.

The following describes three common techniques of behavior management for children with autism:

- Rewards: A child may be rewarded for any and all appropriate behaviors or for a specific appropriate behavior that is incompatible with the undesirable behavior (i.e, rewarding a child with autism for using his hands to play with a toy instead of flapping his hands). As the child is rewarded for substitute behaviors, he/she will be more likely to show them in the future and less likely to exhibit the undesirable behavior. In order to be effective, rewards must be meaningful and motivating to the child.

- Extinction: This is the technical term for the strategy of ignoring a child completely when he/she exhibits an undesirable behavior. It is used for behaviors that are primarily attention-getting (i.e, screaming). This technique requires consciously removing all attention from a child whenever an undesirable behavior is exhibited.

- Time-Out: An adult removes the child from a problem situation and all potential reinforcement. A time-out should not be prolonged nor should it be used if a behavior is potentially dangerous.

The Lovaas Method, developed by Dr. O. Ivar Lovaas of the University of California at Los Angeles, is an intensive behavioral therapy used to treat young children with autism (Early Childhood Report, 1995). Lovaas therapy requires thirty to forty hours per week (including school) of one-to-one therapy by specially-trained individuals. The therapy begins preferably before the age of three and with two years of one-to-one training from four to six hours a day five to seven days a week. This method is based on the premise that children with autism do not learn from their environment as typically-developing children do and, therefore, need a special, intense and comprehensive learning environment. The therapy relies on the introduction of a behavior, prompting the behavior and reinforcing it. Lovaas views autism as a group of numerous behavioral deficits and has developed hundreds of individual lessons to teach socially acceptable behaviors. Treatment goals include:

- developing language;
- increasing social behavior;
- promoting cooperative play; and
- decreasing excessive rituals, tantrums and aggressive behaviors.

According to Lovaas, during the second year of treatment children should learn expressive and early abstract language and interactive play with peers. Therapy extends into the third year to enable the child to function within a preschool group. Treatment and consultation should lessen as children become better able to adjust.

Lovaas treatment sessions involve:

- Helping the child respond to verbal commands such as sitting and maintaining eye contact. When these steps are accomplished, the child will feel successful and good about him/herself.
- Providing nonverbal instruction in areas such as gross and fine motor skills.
- Teaching matching and sorting skills to support language development.
- Teaching by prompting, reinforcing and then slowly fading both the prompts and reinforcement.

Lovaas emphasizes the importance of parent involvement in all aspects of the treatment. Parents must be trained in the Lovaas method and committed to teaching their child at home. In order to achieve quality control in implementing the Lovaas method, training teachers and parents takes between six and nine months.

The TEACCH method was developed by Dr. Eric Schopler of the University of North Carolina at Chapel Hill. TEACCH, while containing a behavior modification component, is characterized by Dr. Schopler as a "cognitive" approach to teaching self care skills and managing disruptive behavior. The emphasis in TEACCH is on making use of skills that children already possess (Mandlawitz, 1996).

In contrast to Lovaas, TEACCH is presented by special education staff within the classroom who have received specific training in the methodology. Children perform tasks at special work stations, often separated by dividers from the rest of the class. The tasks are often repetitive, visual-motor activities. Children operate independently using certain cues.

When using any kind of behavioral intervention strategy, this treatment technique must be integrated into the overall curriculum and applied consistently throughout the day. This approach is highly structured and has been widely used as an intervention for individuals with autism. These procedures can be combined with some of the other techniques listed throughout this paper.

DAILY LIFE THERAPY

"Within every living child exists its most precious
bud of self-identity. To search this out and foster
it with loving care; that is the essence of
education of the autistic child."

- Dr. Kiyo Kitahara

Daily Life Therapy was founded by the late Dr. Kiyo Kitahara of Tokyo, Japan. Dr. Kitahara's methods emerged from her experience teaching a child with autism in her regular kindergarten class. Her method of using group dynamics to support curriculum incorporates physical education, art, music, academics and the acquisition and development of communication and daily living skills to promote social independence.

Daily Life Therapy includes:

- establishing stability of emotions gained through the pursuit of independent living and the development of self-esteem;
- extensive physical exercise. It is believed that vigorous physical exercise promotes the release of endorphins in the body that are natural inhibitors of anxiety and help to increase self-control while decreasing aggressive and self-stimulatory behavior;
- stimulating the intellect. Instruction is provided in language arts, mathematics and social sciences, with special attention paid to the interests of the child;
- emphasizing instruction in special subject areas such as art and music;
- using a holistic approach and developing a strong teacher/child bond; and
- providing opportunities for children to model and imitate peers in order to develop appropriate behaviors and enhance group dynamics and interaction among children.

Daily Life Therapy is not a set of discrete techniques or interventions to change and eliminate the behaviors of autistic children, but is a holistic approach based on bonding between child and teacher (Boston Higashi School, 1996).

THE SON-RISE PROGRAM

The Son-Rise Program, based on the teachings of Barry Neil Kaufman and Samahria Lyte Kaufman, teaches parents of children with autism how to design and implement child-centered programs in their own homes. Rather than teaching specific skills to their child, parents are taught how to encourage and motivate their child through observing the child's behavior and engaging the child in activities he/she appears to enjoy. This approach emphasizes the child as the teacher and the parent as the learner, for the parent's role is to take cues from the child with respect to his/her interests and to trust, encourage and support the child's choices and learning process. For example, if a child demonstrates an interest in trains and spends considerable time playing with trains, the parent is encouraged to join the child in playing with the trains and pointing out their various attributes such as color or function. This approach is based on a belief that going with instead of against the child with autism leads to the child becoming more motivated to explore and develop. Motivation is described as the key factor that determines the success of any program (Option Institute, 1996).

SENSORY STIMULATION PROGRAMS

"But as a child, the 'people world' was often
too stimulating to my senses.
Ordinary days with a change in schedule or
unexpected events threw me into a frenzy...
The clamor of the many voices, the different
smells, perfume, cigars, damp wool caps or
gloves - people moving about at different
speeds, going in different directions,
the constant noise and confusion,
the constant touching, were overwhelming."
(Grandin, 1986)

Some children with autism appear to have difficulty processing sensory information. Some are uncomfortable with touch, movements, sights, lights, sounds, etc. Such stimuli can provoke considerable anxiety and/or agitation. For example, some children with autism find human contact, such as hugging, stressful. To contrast, other children with autism enjoy being hugged and find it calming. The inability to modulate and organize sensory input may impede an autistic child's functioning. Children may not be able to focus and attend to activities if, for example, the environment is too noisy. The sensory needs of a child must be understood and then addressed through activities that will enable the child to make an adaptive response to the demands of a situation (King, 1990). For example, when joining his/her classmates for lunch, a child with autism may have difficulty tolerating the noise generated by a large group of children. In this situation, begin by giving the child one or two lunch partners and then gradually increase the size of the lunch group.

Many autistic children crave pressure stimulation (i.e., being sandwiched between mats to feel calm) even though they cannot tolerate being touched. Also, it is easier for a person with autism to tolerate touch if he or she initiates it (Grandin, 1995). Even though the sense of touch may be excessively sensitive, it sometimes provides the most reliable information about the environment for people with autism (Grandin, 1995). When planning a program to help children experience the sense of touch in a positive way, gather meaningful assessment information as a foundation for structuring the environment.

The individual responsible for the assessment should be knowledgeable about autism and how the senses affect each individual child's functioning. In a sensory integration program, ensure that:

- children have an opportunity to make choices about the types of sensory input they need and can tolerate. For example, a child may love to swim and be in water yet dislikes the feel of sand and sand-related activities;
- activities are motivating and fun; and
- children are protected from over-stimulation. It is unfair and unrealistic to expect them to "get used to things" that upset them. For example, many individuals will not wear a woolen sweater because it feels too itchy; likewise, a child with autism will have his/her preferences.

Additionally, it is important to use socially-acceptable calming strategies such as:

- calming orchestral music;
- calming physical actions (rocking, swinging, rolling, jumping on a trampoline, tilt board, spinning in a swivel chair, rocker boats);
- pressure touch/tactile activities (massage, sandwich game, roll up in textured blankets, obstacle courses with textured surfaces);
- calming through vibration (riding in cars, hand vibrators, vibrating foot bath); and
- using a calm, quiet voice and low tones to speak to the child. Loud or shrill voices can cause physical pain for many hypersensitive children.

FACILITATED COMMUNICATION

"Facilitated communication" is a method of assisting people who have limited use of spoken language. Facilitated communication can occur through spelling on alphabet boards, CANON Communicators, computers or electric typewriters. Physical support is given by the facilitator to the hand, wrist, arm or elbow of the person while he/she touches the letters with the index finger. This support, once established, can be decreased to a light touch on any part of the body or by the physical presence of the facilitator. Facilitated communication is just beginning to be used with some young children with autism.

It has been suggested that facilitated communication may be a valuable accommodation for those individuals with autism who also have movement disturbances. Movement disturbance refers to an interference in the efficient, effective use of movement that is not caused by paralysis or weakness, but by difficulties in the regulation of movement. While it is acknowledged that there is no guarantee that the communication resulting from facilitated communication is solely the product of the communicator. It is assumed that there can be a facilitator influence at any time because human beings tend to influence each other's conversation.

Facilitated communication is a subject of controversy. It is based on the belief that individuals with autism understand language and think using language, yet are prevented from demonstrating this knowledge by their disability. Some people believe that the language elicited is actually language of the facilitator (i.e. the facilitator, not the individual with autism, may be spelling out the words). Others have described the success of facilitated communication as helping individuals with autism to communicate and express thoughts and feelings that were *locked inside.*

Additional research in the effectiveness and validity of facilitated communication is needed in all areas.

MEDICATION

Medications are not a cure for autism, and because there are so many facets to the disorder of autism, there is no specific medication to alleviate all of the symptoms. Children may benefit from drugs to treat specific symptoms such as attention disorder or seizures (Rapin, 1991). The use of medications to treat autism and other pervasive developmental disorders has significant potential as an adjunct to educational, environmental, and social interventions (Cook and Leventhal, 1995). Given the various side effects of some of these medications, individuals working with a child with autism (parents, physician, teachers) must come together to discuss

medication as a treatment along with other interventions. Unconventional approaches to medication, such as megavitamin therapies, generally have a poor reputation in the medical community. The effects of any medication should be carefully monitored.

The following medications are sometimes used to treat the various symptoms of autism:

- Depakene, Dilantin and Phenobarbital are commonly prescribed for seizure control.
- Methylphenidate (Ritalin), pemoline (Cylert), and dextroamphetamine (Dexedrine) may be used for inattentiveness or hyperactivity. **Note: These medications may worsen the behavior of some children. All need caution.**
- Major tranquilizers such as the neuroleptic, antipsychotic drugs haloperidol (Haldol), thioridazine (Mellaril), and chloromazine (Thorazine) have been helpful on a short-term basis to calm a child and enable him/her to be more receptive to behavioral intervention. Prolonged use of these drugs is not advisable due to the possibility of irreversible side effects such as the development of tardive dyskinesia (unusual, uncontrollable body movements).
- A number of small studies indicate that fluoxetine (Prozac), an antidepressant, and naltrexone, an opiate, may suppress or reduce self-injury and excessive activity levels (Campbell et al., 1990; Leboyer et al., 1992). However, more extensive clinical trials are needed to validate the usefulness of these interventions.
- Fenfluramine (Pondimin), propranolol (Inderal), antidepressants, and anxiolytic drugs have also been tried with some individuals with autism, again with varying degrees of success.
- Melatonin, which can be purchased over the counter, may be used as a natural sleeping aid to help children with autism who have difficulty falling asleep (Panksepp, 1991).

RELAXATION, VISUAL IMAGERY AND OTHER SELF-CONTROL TECHNIQUES

The purpose of these techniques is to assist the child in recognizing and expressing his/her emotions. Children with autism often use excessive or inappropriate verbalizations or various forms of self-abusive behavior as a way of coping with stress or anxiety. These behaviors interfere with learning and are problematic for the child. Teaching how to recognize feelings of upset or anxiety and providing techniques to cope with these feelings (i.e., listening to calming music, holding something soft) will help the child to reduce problematic behaviors. Providing children with calming strategies to rely upon when they are stressed will enhance their well being by increasing muscle tone and sensory motor control. When a child feels calm and relaxed, he/she will feel more in control and better able to interact with the environment, resulting in greater self-esteem and dignity.

OTHER THERAPIES

The following interventions may also improve the behavior and functioning of some children with autism:

- Aromatherapy
- Dance Therapy
- Developmental Therapy
- Equestrian Therapy
- Holding Therapy
- Music Therapy
- Patterning
- Visual Retraining
- Auditory Retraining
- Massage
- Physical Therapy
- Play Therapy
- Structured Teaching
- Physical Exercise
- Occupational Therapy

Further research in each of the above therapies is needed. Decisions to use any of these therapies should be based on the individual needs of the child, and it is important to take cues from the child when assessing the effects of such approaches.

APPENDIX C

GENERAL AUTISM TREATMENT CATEGORIES

Important Note:

1. This is a partial list. It has been estimated that there are probably more than 400 different treatments for Autism.
2. The categories of treatment could be divided in different ways, since many of the approaches share common features.
3. Most children receive more than one treatment. Autism is a spectrum disorder that requires a spectrum of treatment options.
4. Data reflecting the efficacy of these methods is extremely limited. Current outcome studies favor comprehensive behavioral approaches.

Type of Treatment	Examples	References, Sources of Information
Behavioral and Educational (comprehensive approaches)	Applied Behavioral Analysis (ABA)	Cooper, Heron & Heward (1987) Koegel & Koegel (1995) Lovaas (1981) Lovaas (1987) Maurice (1993) Maurice, Green & Luca (1996) Miller, L.K. (1997)
	Inclusion e.g., LEAP (Learning Experiences, and Alternative Program for Preschoolers and Their Parents)	Apolloni & Cooke (1978) Myles et al, (1993) Odom & Strain (1984) Strain (1983) Strain, Hoyson & Jamieson (1985)
	TEACCH (Treatment and Education of Autistic and Related Communication Handicapped Children)	Lord & Schopler (1994) Schopler, Mesibov & Hersey (In press) Schopler, Relchier & Lansing (1980)

Type of Treatment	Examples	References, Sources of Information
Biological Treatments	Diet	Crook (1994) Feingold (1975) Reiten (1987)
	Megavitamins	Rimland (1987)
	Psychopharmacological medications (e.g., to reduce aggression, self injury, hyperactivity, focus, mood disorders, etc.)	McDougle (1997) Campbell et al. (1990) Gordon Stale, Nelson & Rappaport (1993) Leboyer et al. (1992) Locascio et al. (1991)
Speech-Language Therapy	Developmental-Social Pragmatic Instruction & Behavioral Techniques	Prizant, Schuler, Wetherby & Rydell (1997) Schuler, Prizant & Wetherby (1997) Fey (1986) Lovaas et al. (1981) Maurice et al. (1986)
	Treatments for Auditory Processing Disorders & Treatments for Associated Speech Disorders	Tallal et al. (1996) Creaghead et al. (1987) Love, R.K. (1992)

Type of Treatment	Examples	References, Sources of Information
Communication Modalities	American Sign Language	Konstantareas (1985) Yoder & Layton (1988)
	Picture Exchange Communication System	Frost & Bondy (1994)
	Language Boards	Fried-Oken (1987) Musselwhite & St.Louis (1982)
	Bliss Symbolics	Bliss (1965)
	Picsyms (e.g. Meyer-Johnson)	Meyer Johnson (phone: 619-550-0084)
	Electronic Systems	Vanderheiden & Yoder (1986)
	Facilitated Communication	Biklen (1967)
Psychodynamic Therapies	Psychoanalysis (no longer used)	Bettlehelm (1967)
	Floor Time	Greenspan (1992) Greenspan (1994)
	Gentle Teaching	McGee & Gonzales (1990)
	Holding Therapy	Tinbergen & Tinbergen (1983) Welch (1987)
	Humanistic Play Therapy	Axline (1965) DesLauriers & Carlson (1969)
	Options	Kaufman (1976)

Type of Treatment	Examples	References, Sources of Information
Sensory Integrative Therapies	Occupational Therapy	Ayers (1972) Ayers (1979)
	Auditory Integrative Training	Berard (1993) Rimland & Edelson (1995) Tomatis Method (Phone: 301-657-9088)
Other	Dolphin Therapy Equestrian Therapy Music Therapy Vision Therapy	Wimpory, Chadwick & Nash (1995)

Adapted from Koenig & Mulick (11-22-97)

A SAMPLING OF TREATMENT APPROACHES USED CURRENTLY

Treatment	Assumptions & Guiding Principles	Goals	A Sampling of Major Strategies	Parental Role
Applied Behavior Analysis (ABA) a.k.a. Intensive Behavioral Intervention (IBI)	Autism is a syndrome of behavioral deficits and excesses that are amendable to change through specific carefully programmed, constructive interactions with the environment. Children with autism do not learn readily from typical environments prior to treatment. Studies show that (1) intensive early behavioral intervention can result in age-appropriate performance for almost 50% of children with Autism Spectrum Disorder and that (2) all children with Autism Spectrum Disorder can benefit greatly from an ABA approach to instruction. By targeting areas of weaknesses as well as strength, the developmental profiles of children with autism can become more similar to age-expectations. Learning activities should build on each child's interests.	To teach simple and complex pivotal skills that will enable children to learn from natural experience in the average environment. To develop a behavioral profile that is as typical as possible. To move towards inclusion at a level that is consistent with the acquisition of requisite skills. To develop skills which will enable an individual to function as independently as possible and to participate in the life of his/her family and community with joy as fully as possible.	Intensive (30 to 40 hours/week) Curriculum is designed in consideration of a child's current skills and the skills expected of same age peers. Functional Analysis Task Analysis Individual reinforcement systems Repeated practice through discreate trials. Prompting & Prompt Fading Modeling Shaping & Chaining Incidental Teaching Mand-Model Systematic Generalization Training Instructional groupings that begin with 1:1 and than progress to small groups and to increasingly larger groups up to classroom size. Data-based decision making.	Parents play a central role as therapists, as coordinators and administrators of their children's home programs, and as key consultants to their child's center based programs or inclusive classrooms.

Treatment	Assumptions & Guiding Principles	Goals	A Sampling of Major Strategies	Parental Role
Auditory Processing Therapy (e.g., Fast Forward)	Some children with autism do not discriminate the individual sounds within words (or the boundaries between those sounds) unless the rate of the speech signal is reduced. This problem may interfere with the children's acquisition of conventional language skills.	To assist children in learning to discriminate between phonemic boundaries within increasingly larger units of speech.	Listening tasks are adapted to meet the specific processing abilities of each child. As a child gains proficiency, the response requirements are modified correspondingly until age-appropriate processing rates are attained. All adjustments are made automatically by a computer based on the child's performance data. This is sometimes called "classes for their ears."	Parents do not play a role in the therapy per se. However, participation in this program requires a daily commitment of time over a period of 5 or more weeks.
Communication Modality Options (e.g., PECS)	For some children, the desire to communicate what they want develops earlier than the ability to use oral language. All children need a means of communicating their intentions. Some children will find it easier, initially, to use small objects, photographs, visual symbols, printed words, etc., rather than speech as signals to carry a message.	To enable children to communicate their intentions even if oral language is not yet a primary option. To teach the use of signals for initialing as well as responding. To encourage the use of vocalization and speech to the fullest extent possible.	Assessment of communicative needs (e.g , current strategies, motivations, etc.) Identification of the most universal and least restrictive devise or system. Use of the system in a variety of communicative contents. Encouragement for speaking or vocalizing simultaneously while using alternative modalities.	Parents provide information about child's communicative history; create situations which motivate and reinforce communication and generalization.

Treatment	Assumptions & Guiding Principles	Goals	A Sampling of Major Strategies	Parental Role
Developmental Social-Pragmatic Approach to Language Intervention	Children with autism present with a major deficiency in 1. the development of a normal range of communication intentions, and 2. the socially appropriate uses of communication signals. An intervention approach which uses the child's internal motivations in a typical environment can reduce these deficits.	To build a complete range of social communicative functions. To facilitate the use of language forms consistent with a child's communicative intent. To develop increasingly advanced levels of meaning, organization, and expression.	Select developmental targets. Follow the child's lead. Develop Joint Activity Routines (JAR) Increase the flexibility of JARs. Expand the content of JARs. Teach peers to engage children with autism in JARs. Alternate modalities used when needed.	Parents are encouraged to participate as much as is comfortable within the family system.
Floor Time (Greenspan)	Children with Multisystems Developmental Disorders (MSDD) (Including many with PDD) can benefit from floor time. Floor time moves children through developmental stages: 1. Regulation and interest in the world, 2. Forming relationships, 3. Intentional two-way communication, 4. Behavioral organization, 5. Behavioral elaboration, 6. Representational capacity, 7. Representational elaboration, 8. Development of emotional ideas, 9. Development of emotional thinking.	To develop the highest level of functioning that a child can achieve. To motivate increasingly higher levels of performance through relationship-based interactions based on the child's interests.	Intensive floor time involving five key procedures: 1. Observe the child, 2. Open the circle of communication by acknowledging the child's affective tone, 3. Follow the child's lead by being a supportive play partner, 4. Extend and expand play, 5. Allow the child to close the circle of communication. Use support services to address other issues in the multi-system developmental disorder (e.g., OT and/or PT, SLP, integrated early education program with special education support).	Parents participate as therapists, coordinators, and administrators of their child's home programs. They also participate as key consultants to their child's school programs.

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Treatment	Assumptions & Guiding Principles	Goals	A Sampling of Major Strategies	Parental Role
Inclusion (e.g., LEAP-Learning Experiences an Alternative Program for preschoolers and their parents).	Children should be taught in the least restrictive environment. Children with autism can benefit from the learning opportunities available in a typical classroom.	To provide ASD children with typical role models. To assist children in functioning in a typical environment. To expose typical peers to children with ASD.	Exposure to typical peer models. Provide shadow aides to support a child's participation. Train peers to engage children with autism in communicative exchanges.	Parents generalize skills in home and in the community.
Sensory Integration (Auditory, Visual, Tactile, Perceptive, Vestibular, Gustatory, Olfactory).	Learning requires normal sensory processing. Normal sensory processing requires neurological integrity. Neurological integrity can be achieved through an individually designed sensory diet. Without a normalized sensory diet, children with autism may develop self-stimulatory behaviors to stimulate their senses.	To normalize sensory experience so that a signal is not so powerful or so week to interfere with the perception of it's meaning. To assist children in moving through the developmental stages which are basic to information processing at successful levels. To support children in following their natural motivations for leisure activities.	e.g., Sensory Diet Graded Experiences Interesting motivating activities Vasilbular Stimulation Deep Pressure (e.g., squeeze machine) Brushing	Parents can provide children with appropriate experiences and toys. They can also help to generalize newly acquired skills.
Social Stories	Learning opportunities can be optimized by providing children with model situations. The most relevant situations are ones in which 1. The child herself is at the center of an activity, and 2. The theme is based on activities in which the child engages.	To provide children with models of appropriate behavior through individually-designed social stories about themes pertinent to the child's life.	Write social story with child at center of an activity for him or her. Read story to child prior to the activity. Talk about the story with child.	Parents play a major role in writing and presenting the stories to their children.

Treatment	Assumptions & Guiding Principles	Goals	A Sampling of Major Strategies	Parental Role
TEACCH (i.e., Treatment and Education of Autistic and Related Communication Handicapped Children)	Autism is a lifelong disability. Children with autism constitute a subculture with a unique set of strengths, weaknesses, and range of tolerance for variation. The educational environment should accommodate their communication, social and cognitive patterns. Instruction should capitalize on natural strengths.	To minimize frustration. To develop skills that will enable individuals to earn a living, live as independently as possible, and participate in the life of their community as much as possible.	Structured teaching in a center-based and community-based context. Provide a classroom that has clearly defined work areas. Use visual schedule systems to organize activities throughout the day. Process materials from left to right. Use work systems (JIGS) which involve visual prompts to scaffold a sequence of steps. Observe the rule of "First work, then play."	Parents help to generalize a child's acquired skills to the home and community, and parents are key consultants to the design of the child's program.

Adapted from Koenig & Mulick (11-22-97)

RESOURCES

STATE RESOURCES

Autism Society of America - Massachusetts Chapters

Autism Society of America - Massachusetts Chapter
789 Clapboardtree Street
Westwood, MA 02090
Information & Referral: 781-329-4244

Autism Society of America - Central Massachusetts Chapter
640 South Oxford Street
Auburn, MA 01501 phone: 508-832-6313

Autism Society of America - Western Massachusetts Chapter
53 Williamsburg Drive
Longmeadow, MA 01106 phone: 413-567-5175

Autism Resource Center of Central Massachusetts
360 West Boylston Street
Suite 213
West Boylston, MA 01583
phone: 508-595-9101, fax: 508-854-8148

Autism Support Center
64 Holten St.
Danvers, Massachusetts 01923
phone: 978-777-9135

Community Autism Resources
Adsum, Inc.
240 Elm St.
PO Box 1511
Fall River, Massachusetts 02722
phone/fax: 508-677-9239, fax: 508-673-3061

Community Resources for People with Autism
116 Pleasant Street
Easthampton, MA 01027
phone: 413-529-2428

Family Autism Center
789 Clapboardtree Street
Westwood, MA 02090
phone: 781-762-4001

Parent/Till Partnership for Autism
20 East Brook Road
Suite 201
Dedham, MA 02026-2056
phone: 781-329-6150 ext. 753

Joseph Lee School
155 Talbot Avenue
Dorchester, MA 02124
phone: 617-935-8687 ext. 151 & 122

The Federation for Children with Special Needs
Provides parent trainings and special education advocacy

95 Berkeley Street Suite 104
Boston, MA 02116
phone: 617-482-2915
800-331-0688

Massachusetts Families Organizing for Change
A grassroots coalition of families with children and adults with disabilities or chronic illness, whose mission is the creation of a statewide policy for individual and family support.

P.O. Box 50
Raynham, MA 02768
phone: 800 40-MFOFC (406-3632)

ARC of Massachusetts
Helping people with developmental disabilities find services. Call to find your local ARC.

217 South Street
Waltham, MA 02154
phone: 781-891-6200

NATIONAL ORGANIZATIONS

Autism National Committee
7 Teresa Circle
Arlington, Massachusetts 02174
phone: 781-648-1813

Autism Society of America

"Focus on Autism and Other Developmental Disabilities"; Volume 1, Number 5 is entitled Teaching Functional Social Skills to Children with Autism; and Volume 2, Number 1 entitled Curriculum as a Behavior Management Tool for Students with Autism; both published by Aspen Publishers, Inc., 1600 Research Blvd., Rockville, MD 20850.

"Inclusive Education Programs: Advice on Educating Students with Disabilities in Regular Settings" is available from LRP Publications, 747 Dresher Road, Suite #500, P.O. Box 980, Horsham, PA 19044-0980, (800) 341-7874 or fax (215) 784- 9639.

Journal of Autism and Developmental Disorders
Plenum Publishing Corporation, 227 W. 17th ST., New York, NY 10011

The MAAP Newsletter for More Advanced Autistic People and their Families
Susan Moreno - publisher
PO Box 524, Crown Point, IN 46307

READINGS ON AUTISM

The following is a partial listing of reading materials, which may be of help to parents and professionals, that cover the following topics: books for children on autism; brothers and sisters of children with autism; families and autism; general reading information on autism.

BOOKS FOR CHILDREN ABOUT AUTISM

Amenta, C.A., III. (1992). Russell is Extra Special: A Book About Autism for Children, New York: Brunner-Mazel Publishers.

Katz, I., & Ritvo, E. (1993). Joey & Sam, West Hills, CA: Real Life Storybooks.

Martin, A.M. (1984). Inside Out, New York, NY: Scholastic Inc.

Martin, A.M. (1990). The Babysitters Club: Kristy and the Secret of Susan, New York, NY: Scholastic Inc.

Messner, A., (1996). Captain Tommy, New Hampshire: Potential Unlimited Publishing Foundation.

Nolette, C.D. (1986). Having a Brother Like David, South Minneapolis, MN: Minneapolis Children's Medical Center Program for Autism and Other Exceptional Children.

Thompson, M. (1996). Andy and His Yellow Frisbee, Bethesda, MD: Woodbine House.

BROTHERS AND SISTERS OF CHILDREN WITH AUTISM

Howlin, P. (1988). Living with impairment: The effects on children of having an autistic sibling, Child: Care, Health and Development, 14, 395-408.

Leonard-Toomey, Patricia (1997). In Our Own Words...Stories by Brothers and Sisters of Children with Autism and P.D.D. Community Autism Resources, Adsum, Inc.

Lobato, D. (1983). Siblings of handicapped children: A review, Journal of Autism and Developmental Disorders, 13 (4), 347-364.

Lobato, D. (1985). Brief Report: Preschool siblings of handicapped children - impact of peer support and training, Journal of Autism and Developmental Disorders, 15 (3), 345-350.

Lobato, D. (1990). Brothers and Sisters and Special Needs, Baltimore, MD: Paul H. Brooks Publishing Company..

McHale, S.M., Sloan, J., and Simonson, R.J. (1986). Sibling relationships of children with autistic, mentally retarded and non-handicapped brothers and sisters, Journal of Autism and Developmental Disorders, 16 (4), 399-413.

Meyer, D. (1997). Views From Our Shoes: Growing Up with a Brother or Sister with Special Needs, Bethesda, MD: Woodbine House.

Meyer, D.J., Vadasy, P.F., and Fewell, R.R. (1985). Sibshops: A Handbook for Implementing Workshops for Siblings of Children with Special Needs, Seattle, WA: University of Washington Press.

Minneapolis Children's Medical Center, (1985). Autism...A Family Affair, Minneapolis, MN: Minneapolis Children's Medical Center.

Siegel, B., & Silverstein, S. (1994). What About Me? Growing Up With a Developmental Disabled Sibling, New York: Plenum Publishing Corp.

FAMILIES AND AUTISM

Autism Society of America (1984). How They Grow: A Handbook for Parents of Young Children with Autism, Silver Spring, MD: Autism Society of America.

Baker, B.L. and Brightman, A.J. (1988). Steps to Independence, Baltimore, MD: Paul H. Brooks Publishing Company.

Barron, J. and Barron, S. (1992). There's a Boy in Here, New York, NY: Simon and Schuster.

Betts, C. (1983). Special Kind of Normal: A Young Mother's Story of Life with an Autistic Child, New York, NY: Charles Scribner's Sons.

Brill, M. (1994). Keys to Parenting the Child with Autism, Hauppage, NY: Barron's Educational Series.

Christopher, W. and Christopher, B. (1989). Mixed Blessings, Nashville, TN: Abington Press.

Cutler, B. (1993). You, Your Child and Special Education: A Guide to Making the System Work, Baltimore, MD: Paul H. Brookes.

Dillon, K. (1995). Living with Autism: The Parent's Story, Boone, NC: Parkway Publishers, Inc.

Featherstone, H. (1980). A Difference in the Family - Living with a Disabled Child, New York, NY: Penguin Books.

Fewell, R. and Vadasy, P. (1986). Families of Handicapped Children: Needs and Supports Across the Life Span, Austin, TX: Pro-Ed.

Grandin, T. (1995). Thinking in Pictures and Other Reports from My Life with Autism, New York: Doubleday.

Grandin, T. and Scariano, M.M. (1986). Emergence: Labeled Autistic, Norvanto, CA: Arena Press.

Harris, S. (1994). Siblings of Children with Autism, Bethesda, MD: Woodbine House.

Hart, C. (1993). A Parent's Guide to Autism: Answers to the Most Common Questions, New York: Pocket Books.

Hart, C. (1989). Without Reason: A Family Copes with Two Generations of Autism, New York, NY: Harper and Row.

Krahl, R. (1990). Rebuilding Your Dream - Family Life with a Disabled Child, Iowa City, IA: University of Iowa Publications.

Kushner, H.S. (1981). When Bad Things Happen to Good People, New York, NY: Schocker Books, Inc.

Lambert, P. (1990). Turning Every Stone, Whispering Pines, NC: Scots Plaid Press.

Martin, R. (1994). Out of Silence: A Journey into Language, New York: Henry Holt & Company.

Maurice, C. (1993). Let Me Hear Your Voice, New York: Alfred A. Knopf.

McDonnell, J. (1993). News from the Border: A Mother's Memoir of her Autistic Son, New York: Ticknor & Fields, Houghton Mifflin Company.

McKean, T. (1994). Soon Will Come the Light: A View from Inside the Autism Puzzle, Arlington, TX: Future Education, Inc.

McKean, T. (1996). Light on the Horizon: A Deeper View from Inside the Autism Puzzle, Arlington, TX: Future Education, Inc.

Park, C.C. (1982). The Siege: The First Eight Years of an Autistic Child with an Epilogue, Fifteen Years Later, Boston, MA: Little, Brown and Company.

Powers, M.D. (1989). Children with Autism: A Parent's Guide, Rockville, MD: Woodbine House.

Russel, L.M. (1983). Alternatives: A Family Guide to Legal and Financial Planning for the Disabled, Evanston, IL: First Publications, Inc.

Satkiewicz-Gayhardt, V., Peerenboom, B., Campbell, R. (1996). Crossing Bridges: A Parent's Perspective on Coping After a Child is Diagnosed with Autism/PDD, Stratham, NH: Potential Unlimited Publishing.

Schopler, E. (1995). Parent Survival Manual: A Guide to Crisis Resolution in Autism and Related Developmental Disorders, New York: Plenum Press.

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Schulze, C.B. (1993). When Snow Turns to Rain: One Family's Struggle to Solve the Riddle of Autism, Bethesda, MD: Woodbine House.

Simons, R. (1987). After the Tears: Parents Talk About Raising a Child with a Disability, Orlando, FL: Harcourt, Brace, Javanovich Publishers.

Simpson, R.L., & Zionts, P. (1992). Autism: Information & Resources for Parents, Families and Professionals, Austin, TX: PRO-ED.

Stehli, A. (1995). Dancing in the Rain, Westport, CT: Georgiana Organization Inc.

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INTERNET RESOURCES

The accuracy and validity of information on the Internet cannot be assured.

Autism Society of America
http://www.autism-society.org/

Center for the Study of Autism
http://www.autism.org
http://www.autism.com

Federation for Children with Special Needs
http:www.fcsn.org

Indiana Resource Center for Autism
http://www.isdd.indiana.edu/~irca/Welcome.html

National Alliance for Autism Research
http://www.naar.org

National Information Center for Children and Youth with Disabilities
http://www.nichcy.org

New England Index
http://ne-index.shriver.org

Syracuse University
http://web.syr.edu/~jmwobus/autism/
http://web.syr.edu.80/~rjkopp/autismlink.html
Treatment and Education of Autistic and Related Communication Handicapped Children, TEACCH
http://www.unc.edu/depts/teacch

Yale Child Study Center
http://info.med.yale.edu/chldstdy/autism/